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AD NUMBER
AD815372
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AD815372

April 12, 1967
DMIC Memorandum 223

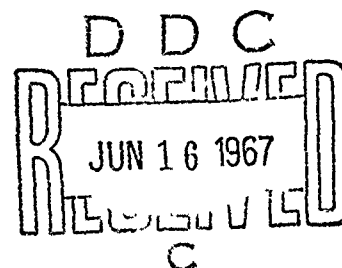
DESIGNATIONS OF ALLOYS FOR THE AEROSPACE INDUSTRY

DEFENSE METALS INFORMATION CENTER
BATTELLE MEMORIAL INSTITUTE
COLUMBUS, OHIO 43201

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DESIGNATIONS OF ALLOYS FOR THE AEROSPACE INDUSTRY

W. D. Penniman*

INTRODUCTION

The purpose of the memorandum is to provide identification of the principal alloys of interest in defense work. In the course of establishing a technical Data File at DMIC, a list of index terms was prepared. The terms used for storing and retrieving metals data encompass the base metals in the DMIC scope and the individual alloys on which DMIC has received data within the past several months. In addition, most of the standard alloys of interest to the aerospace community were added.

Because the term list includes designations, nominal chemistry, and specifications, it presents much of the same type of information that was contained in DMIC Memorandum 177, and the earlier publication, DMIC Memorandum 42R.

A program was written to machine search the total list and extract those entries that would be pertinent to updating Memorandum 177. This memorandum is the output of that machine search. The complete listing from which the alloy designations and standards were extracted contains additional terms describing application factors, manufacturing processes, metallurgy, and test information. A limited number of copies of the entire dictionary list are also available for those interested in the total descriptor vocabulary.

Since the programming is completed and alloys will be added to the term list on a continual basis, it is planned to update this memorandum frequently in the future.

ORGANIZATION OF THE DICTIONARY LIST

The format of the term list consists of an alphabetical listing of alloys, base materials, and specifications with the associated generic relationships listed for each term. The generic identifications are indications of how one word relates to another. For instance, AISI 4140 is a narrow term (NT) under steel and steel is a broader term (BT) under AISI 4140. Specifications are related to their appropriate alloy; for example, AMS 5399 refers to René 41 and, therefore, each of these two terms is a related term (RT) to the other. Where the nominal composition was available for a specific alloy, this information is presented as a scope note immediately following the alloy designation. The composition is presented by percent weight. Preferred alloy designations are identified by the "USE" and "USED FOR" relationships as defined in the following paragraph. Preference in alloy designations was determined by current literature usage.

All of the above relationships have been adopted by the Engineers Joint Council for use in their "Thesaurus of Engineering Terms". The following list defines all the abbreviations which are used and includes examples showing the relationship.

*Information Specialist, Information Operations Division, Battelle Memorial Institute, Columbus, Ohio.

- USE: Use - For the purpose of this publication "use" indicates a preferred alloy designation, e.g., 418 SPECIAL USE GREEK ASCOLOY
- UF: Used for - The designations not preferred are listed after the preferred terms as "used for" references, e.g., GREEK ASCOLOY UF 418 SPECIAL
- RT: Related Terms - In this publication related terms are used to show the connection between alloys and their applicable specifications, e.g., GREEK ASCOLOY RT AMS 5354B and AMS 5354B RT GREEK ASCOLOY
- NT: Narrower Terms - Alloys are indicated as narrower terms to their appropriate base metals, e.g., STEEL NT GREEK ASCOLOY
- BT: Broader Terms - Base metals are indicated as broader terms to their appropriate alloys, e.g., GREEK ASCOLOY BT STEEL
- SCOPE NOTE: Immediately following the preferred alloy designation will appear the nominal chemical composition of the alloy by weight in percent as indicated by current literature.

This memorandum should prove useful in identifying alloy designations, compositions, and related specifications for the aerospace industry. It is not intended to replace other more comprehensive listings. Instead, this memorandum is intended to present an up-to-date listing of materials of interest to DMIC with their appropriate specifications, nominal chemistry, and designations.

INDEX

This index is not meant to be exhaustive but is intended to locate major entries of particular interest. Each such entry is further identified within the text by a bold face heading immediately preceding the standard line listing.

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ALLOYS AND SPECIFICATIONS (ALPHANUMERIC LISTING)

AFC-77
 14.5CR-13.5CO-5MO-V-N2-BAL (FE)
 BT STEEL
 AF-71
 16MN-12CR-3MO-V-B-BAL (FE)
 BT STEEL
 AF-1753
 .24C-16.3CR-7.2CO-1.6MO-8.4W-9.5FE-3.2TI-1.9AL
 -.008B-.06ZR-BAL (NI)
 BY ANAL

AISI (AMERICAN IRON AND STEEL INSTITUTE SPECIFICATIONS)

AISI E 9310 H
 USE AISI 9310 H
 AISI E 52100
 USE AISI 52100
 AISI 201
 17.0CR-6.5MN-4.5NI-BAL (FE)
 BT STEEL
 AISI 301
 17.0CR-7.0NI-.14CMAX-BAL (FE)
 BT STEEL
 AISI 301N
 17.0CR-7.0NI-.12N-.10CMAX-BAL (FE)
 BT STEEL
 AISI 302
 18CR-8NI-BAL (FE)
 BT STEEL
 AISI 303
 18CR-9NI-SI-BAL (FE)
 BT STEEL
 AISI 304
 19CR-9.5NI-.08CMAX-BAL (FE)
 BT STEEL
 AISI 304ELC
 19CR-9.5NI-.03CMAX-BAL (FE)
 BT STEEL
 AISI 305
 18CR-12NI-BAL (FE)
 BT STEEL
 AISI 310
 25CR-20NI-BAL (FE)
 BT STEEL
 AISI 314
 25CR-20NI-2SI-BAL (FE)
 BT STEEL
 RT AMS 55228
 AISI 316
 18CR-13NI-MO
 BT STEEL
 AISI 316L
 17.0CR-12.0NI-.10C-2.0MG-1.0SI-2.5MO-BAL (FE)
 BT STEEL
 RT AMS 5507
 RT AMS 5653
 AISI 317
 19CR-13NI-3.5MO-2MN-1.0SI-.08CMAX-BAL (FE)
 BT STEEL
 AISI 321
 18CR-10NI-TI-BAL (FE)
 BT STEEL
 AISI 347
 18CR-12NI-CB-BAL (FE)
 BT STEEL
 AISI 348
 18CR-12NI-.20CMAX-BAL (FE)
 BT STEEL
 AISI 403
 12.25CR-1.0MN-.5SI-.15C-.04P-.045-BAL (FE)
 BT STEEL
 AISI 410
 12.25CR-1.0MN-1.0SI-.15C-.04P-.04S-BAL (FE)
 BT STEEL
 AISI 416 SE
 13CR-.25SE-BAL (FE)
 UF SAE 51416F
 BT STEEL
 RT AMS 5610

AISI 416
 13CR-1.25MN-1.0SI-.15C-.60P-.15S-BAL (FE)
 BT STEEL
 AISI 610
 USE H-11 MODIFIED
 AISI 632
 USE PH15-7MG
 AISI 1025
 .25C-.45MN-BAL (FE)
 BT STEEL
 RT AMS 5075A
 RT AMS 5077A
 RT MIL-T-5066
 AISI 1045
 .45C-.75MN-.040P-.050S-BAL (FE)
 BT STEEL
 AISI 1060
 .60C-.75MN-.040P-.050S-BAL (FE)
 BT STEEL
 RT AMS 7240B
 RT FF-W-84
 AISI 1090
 .90C-.8MN-.04P-.05S-BAL (FE)
 BT STEEL
 RT AMS 5112E
 RT QQ-W-470
 AISI 4130
 .30C-.95CR-.20MO-BAL (FE)
 BT STEEL
 RT AMS 6350D
 RT AMS 6351A
 RT AMS 6360E
 RT AMS 6361
 RT AMS 6362
 RT AMS 6370E
 RT AMS 6371C
 RT MIL-S-6758
 RT MIL-S-18729
 RT MIL-T-6736
 AISI 4137 CO
 .39C-1.1CR-1CO-1SI-0.7MN-0.25MO-0.15V-BAL (FE)
 UF MX-2
 UF ROCOLOY
 UF UNIMACH UGX 2
 BT STEEL
 AISI 4140
 .40C-1CR-.2MO-BAL (FE)
 BT STEEL
 RT AMS 6378
 RT AMS 6379
 RT AMS 6381B
 RT AMS 6382E
 RT AMS 6390
 RT AMS 6395
 RT MIL-S-5626
 AISI 4330 MOD
 .30C-1.8NI-.8CR-.4MO-.07V-BAL (FE)
 BT STEEL
 RT AMS 5328
 RT AMS 5329A
 AISI 4335V
 .35C-1.8NI-.8CR-.35MO-.2V-BAL (FE)
 BT STEEL
 AISI 4337
 .37C-.8CR-.75MN-.25MO-1.8NI-.040P-.3SI-.040S
 -BAL (FE)
 BT STEEL
 RT AMS 6412E
 RT AMS 6413C
 AISI 4340
 .4C-.8CR-.75MN-.25MO-1.8NI-.040P-.3SI-.040S
 -BAL (FE)
 BT STEEL
 RT AMS 6359B
 RT AMS 6414
 RT AMS 6415F

AISI 6150
 0.95CR-0.15V-0.50C-BAL (FE)
 BT STEEL
 RT AMS 6448B
 RT AMS 6450C
 RT AMS 6455B
 RT AMS 7301B
 RT MIL-S-8503
 AISI 86245
 .46C-.88MN-.55NI-.65CR-.12MO-.0005N+8-BAL (FE)
 BT STEEL
 AISI 8620
 BT STEEL
 RT AMS 6274G
 RT AMS 6276B
 RT AMS 6277
 RT MIL-S-8690
 AISI 8630
 .30C-.55NI-.5CR-.25MO-.2V-BAL (FE)
 BT STEEL
 RT AMS 6280D
 RT AMS 6281B
 RT AMS 6355G
 RT AMS 6530D
 RT AMS 6550D
 RT MIL-S-6050
 RT MIL-S-1872B
 RT MIL-T-6732
 RT MIL-T-6734
 AISI 8735
 .35C-.88MN-.55NI-.50CR-.25MO-BAL (FE)
 BT STEEL
 RT AMS 6282D
 RT AMS 6320E
 RT AMS 6357C
 RT AMS 6535C
 RT MIL-S-6098
 RT MIL-S-18733
 RT MIL-T-6733
 AISI 8740
 .40C-.55NI-.50CR-.25MO-BAL (FE)
 BT STEEL
 RT AMS 6322E
 RT AMS 6323D
 RT AMS 6324B
 RT AMS 6325D
 RT AMS 6327D
 RT AMS 6358B
 RT MIL-S-6049
 AISI 9310 H
 .10C-3.25NI-1.2CR-.1MO-BAL (FE)
 BT STEEL
 AISI 9310
 BT STEEL
 RT AMS 6260G
 RT AMS 6265B
 RT AMS 6267
 AISI 52100
 1.0C-1.45CR-BAL (FE)
 UF AISI E 52100
 BT STEEL
 RT AMS 6440D
 RT AMS 6441B
 RT AMS 6444B
 RT AMS 6447
 RT MIL-S-7420
 ALLOY E
 2.0TA-0.5SI-0.1TI-BAL (CR)
 BT CHROMIUM
 ALLOY K-500
 USE MONEL ALLOY K-500
 ALMAG 35
 .20SI-.15MN-.10CU-6.7MG-.15TI-.25FE-BAL (AL)
 BT ALUMINUM

ALUMINUM BASE ALLOYS

ALUMINUM (AL)
 NT ALMAG 35
 NT A-140
 NT A 355
 NT B195
 NT C355
 NT RR-77
 NT 40-E
 NT 195
 NT 220
 NT 355
 NT 356
 NT 1100
 NT 2014
 NT 2017
 NT 2020
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 NT 3003
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 NT 5050
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 NT 6061
 NT 6062
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 NT 6151
 NT 6951
 NT 7001
 NT 7002
 NT 7005
 NT 7006
 NT 7007
 NT 7039
 NT 7075
 NT 7079
 NT 7080
 NT 7106
 NT 7139
 NT 7178
 BT BASE MATERIAL
 AM 350
 17CR-4NI-3MO-BAL (FE)
 BT STEEL
 RT AMS 5546
 RT AMS 5548B
 RT AMS 5554
 RT AMS 5745
 RT AMS 5774
 RT AMS 5775
 RT MIL-S-8840
 AM 355
 15.5CR-4.5NI-3MO-BAL (FE)
 BT STEEL
 RT AMS 5359
 RT AMS 5368
 RT AMS 5547B
 RT AMS 5549B
 RT AMS 5594
 RT AMS 5743C
 RT AMS 5744
 RT AMS 5780
 RT AMS 5781
 AM 362
 BT STEEL

AM 363
 .04C-11.5CR-4.0NI-.37I-BAL (FE)
 BT STEEL
 AM 367
 .03C+N-.15MN+SI-.01P+S-14.0CR-3.5NI-15.5CO
 -2.0MO-.5TI-BAL (FE)
 BT STEEL

AMS (AEROSPACE MATERIAL SPECIFICATIONS)

AMS 2241
 BT PUBLIC SPECIFICATIONS
 RT TI-8AL-1MO-1V
 AMS 2242
 BT PUBLIC SPECIFICATIONS
 RT TI-8AL-1MO-1V
 AMS 2249
 BT PUBLIC SPECIFICATIONS
 RT TI-8AL-1MO-1V
 AMS 4001C
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 RT 1100
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AMS 4917
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RT TI-13V-11CR-3A1
AMS 4918A
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RT TI-6A1-6V-2SN
AMS 4923A
BT PUBLIC SPECIFICATIONS
RT TI-2CR-2FF-2MO
AMS 4924A
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RT TI-5A1-2.5SN ELI
AMS 4925B
BT PUBLIC SPECIFICATIONS
RT TI-4A1-4MN
AMS 4926B
BT PUBLIC SPECIFICATION
RT TI-5A1-2.5SN
AMS 4928C
BT PUBLIC SPECIFICATIONS
RT TI-6A1-4V
AMS 4930
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RT TI-6A1-4V ELI
AMS 4935A
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RT TI-6A1-4V
AMS 4953
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AMS 4954A
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RT TI-6A1-4V
AMS 4955
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RT TI-8A1-1MO-1V
AMS 4965
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RT TI-6A1-4V
AMS 4966B
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RT TI-5A1-2.5SN
AMS 4967A
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RT TI-6A1-4V
AMS 4968A
BT PUBLIC SPECIFICATIONS
RT TI-5A1-5SN-5ZR
AMS 4970A
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RT TI-7A1-4MO
AMS 4971
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RT TI-6A1-6V-2SN
AMS 4972
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RT TI-8A1-1MO-1V
AMS 4973
BT PUBLIC SPECIFICATIONS
RT TI-5A1-1MO-1V

AMS 5075A
BT PUBLIC SPECIFICATIONS
RT AISI 1025
AMS 5077A
BT PUBLIC SPECIFICATIONS
RT AISI 1025
AMS 5112E
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RT AISI 1090
AMS 5328
BT PUBLIC SPECIFICATIONS
RT AISI 4330 MOD
AMS 5329A
BT PUBLIC SPECIFICATIONS
RT AISI 4330 MOD
AMS 5340
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RT 14-4PH
AMS 5342
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RT 17-4PH
AMS 5343
BT PUBLIC SPECIFICATIONS
RT 17-4PH
AMS 5344
BT PUBLIC SPECIFICATIONS
RT 17-4PH
AMS 5354B
BT PUBLIC SPECIFICATIONS
RT GREEK ASCOLOY
AMS 5355A
BT PUBLIC SPECIFICATIONS
RT 17-4PH
AMS 5359
BT PUBLIC SPECIFICATIONS
RT AM 355
AMS 5368
BT PUBLIC SPECIFICATIONS
RT AM 355
AMS 5369A
BT PUBLIC SPECIFICATIONS
RT 19-9DL
AMS 5372
BT PUBLIC SPECIFICATIONS
RT TYPE 431
AMS 5373A
BT PUBLIC SPECIFICATIONS
RT STELLITE 6
AMS 5376B
BT PUBLIC SPECIFICATIONS
RT N-155
AMS 5382D
BT PUBLIC SPECIFICATIONS
RT X-40
AMS 5383
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 718
AMS 5384
BT PUBLIC SPECIFICATIONS
RT UDIMET 500
AMS 5387
BT PUBLIC SPECIFICATIONS
RT STELLITE 6
AMS 5388B
BT PUBLIC SPECIFICATIONS
RT HASTELLOY C
AMS 5389A
BT PUBLIC SPECIFICATIONS
RT HASTELLOY C
AMS 5390
BT PUBLIC SPECIFICATIONS
RT HASTELLOY X
AMS 5391A
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 713
AMS 5396
BT PUBLIC SPECIFICATIONS
RT HASTELLOY B

AMS 5397
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 100
AMS 5398A
BT PUBLIC SPECIFICATIONS
RT 17-4PH
AMS 5399
BT PUBLIC SPECIFICATIONS
RT RENE 41
AMS 5507
BT PUBLIC SPECIFICATIONS
RT AISI 316L
AMS 5508A
BT PUBLIC SPECIFICATIONS
RT GREEK ASCOLOY
AMS 5509
BT PUBLIC SPECIFICATIONS
RT D-979
AMS 5520A
BT PUBLIC SPECIFICATIONS
RT PH15-7MO
AMS 5522B
BT PUBLIC SPECIFICATIONS
RT AISI 314
AMS 5525B
BT PUBLIC SPECIFICATIONS
RT A286
AMS 5526C
BT PUBLIC SPECIFICATIONS
RT 19-9DL
AMS 5527A
BT PUBLIC SPECIFICATIONS
RT 19-9DL
AMS 5528A
BT PUBLIC SPECIFICATIONS
RT 17-7PH
AMS 5529A
BT PUBLIC SPECIFICATIONS
RT 17-7PH
AMS 5530C
BT PUBLIC SPECIFICATIONS
RT HASTELLOY C
AMS 5532B
BT PUBLIC SPECIFICATIONS
RT N-155
AMS 5533A
BT PUBLIC SPECIFICATIONS
RT S-590
AMS 5534A
BT PUBLIC SPECIFICATIONS
RT S-816
AMS 5536E
BT PUBLIC SPECIFICATIONS
RT HASTELLOY X
AMS 5537B
BT PUBLIC SPECIFICATIONS
RT L605
AMS 5538
BT PUBLIC SPECIFICATIONS
RT 19-9DX
AMS 5539
BT PUBLIC SPECIFICATIONS
RT 19-9DX
AMS 5540G
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 600
AMS 5541A
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 718
AMS 5542G
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY X-750
AMS 5543
BT PUBLIC SPECIFICATIONS
RT W-545
AMS 5544
BT PUBLIC SPECIFICATIONS
RT WASPALOY

AMS 5545
BT PUBLIC SPECIFICATIONS
RT RENE 41
AMS 5546
BT PUBLIC SPECIFICATIONS
RT AM 350
AMS 5547B
BT PUBLIC SPECIFICATIONS
RT AM 355
AMS 5548B
BT PUBLIC SPECIFICATIONS
RT AM 350
AMS 5549R
BT PUBLIC SPECIFICATIONS
RT AM 355
AMS 5550A
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 702
AMS 5551
BT PUBLIC SPECIFICATIONS
RT M-252
AMS 5554
BT PUBLIC SPECIFICATIONS
RT AM 350
AMS 5568
BT PUBLIC SPECIFICATIONS
RT 17-7PH
AMS 5579
BT PUBLIC SPECIFICATIONS
RT 19-9DL
AMS 5580D
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 600
AMS 5582
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY X-750
AMS 5585
BT PUBLIC SPECIFICATIONS
RT N-155
AMS 5586
BT PUBLIC SPECIFICATIONS
RT WASPALOY
AMS 5587A
BT PUBLIC SPECIFICATIONS
RT HASTELLOY X
AMS 5588A
BT PUBLIC SPECIFICATIONS
RT HASTELLOY X
AMS 5589
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 718
AMS 5590
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 718
AMS 5594
BT PUBLIC SPECIFICATIONS
RT AM 355
AMS 5596A
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 718
AMS 5597
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 718
AMS 5598
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY X-750
AMS 5610
BT PUBLIC SPECIFICATIONS
RT AISI 416 SE
AMS 5616D
BT PUBLIC SPECIFICATIONS
RT GREEK ASCOLOY
AMS 5643H
BT PUBLIC SPECIFICATIONS
RT 17-4PH
AMS 5644C
BT PUBLIC SPECIFICATIONS
RT 17-7PH

AMS 5653
BT PUBLIC SPECIFICATIONS
RT AISI 316L
AMS 5655
BT PUBLIC SPECIFICATIONS
RT TYPE 422
AMS 5657
BT PUBLIC SPECIFICATIONS
RT PH15-7MO
AMS 5660B
BT PUBLIC SPECIFICATIONS
RT INCOLOY ALLOY 901
AMS 5662A
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 718
AMS 5663A
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 718
AMS 5664
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 718
AMS 5665G
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 600
AMS 5667F
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY X-750
AMS 5668D
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY X-750
AMS 5669
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY X-750
AMS 5671
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY X-750
AMS 5673B
BT PUBLIC SPECIFICATIONS
RT 17-7PM
AMS 5676
BT PUBLIC SPECIFICATIONS
RT NICHROME V
AMS 5677
BT PUBLIC SPECIFICATIONS
RT NICHROME V
AMS 5682A
BT PUBLIC SPECIFICATIONS
RT NICHROME V
AMS 5687F
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY 600
AMS 5698
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY X-750
AMS 5699B
BT PUBLIC SPECIFICATIONS
RT INCONEL ALLOY X-750
AMS 5704
BT PUBLIC SPECIFICATIONS
RT WASPALLOY
AMS 5706B
BT PUBLIC SPECIFICATIONS
RT WASPALLOY
AMS 5707B
BT PUBLIC SPECIFICATIONS
RT WASPALLOY
AMS 5708
BT PUBLIC SPECIFICATIONS
RT WASPALLOY
AMS 5709
BT PUBLIC SPECIFICATIONS
RT WASPALLOY
AMS 5712B
BT PUBLIC SPECIFICATIONS
RT RENE 41
AMS 5713B
BT PUBLIC SPECIFICATIONS
RT RENE 41

AMS 5720A
BT PUBLIC SPECIFICATIONS
RT 19-9DL
AMS 5721B
BT PUBLIC SPECIFICATIONS
RT 19-9DL
AMS 5722B
BT PUBLIC SPECIFICATIONS
RT 19-9DL
AMS 5723A
BT PUBLIC SPECIFICATIONS
RT 19-9DX
AMS 5724
BT PUBLIC SPECIFICATIONS
RT 19-9DX
AMS 5729
BT PUBLIC SPECIFICATIONS
RT 19-9DX
AMS 5731B
BT PUBLIC SPECIFICATIONS
RT A286
AMS 5732B
BT PUBLIC SPECIFICATIONS
RT A286
AMS 5733D
BT PUBLIC SPECIFICATIONS
RT DISCALOY
AMS 5734A
BT PUBLIC SPECIFICATIONS
RT A286
AMS 5735F
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RT A286
AMS 5736C
BT PUBLIC SPECIFICATIONS
RT A286
AMS 5737C
BT PUBLIC SPECIFICATIONS
RT A286
AMS 5741D
BT PUBLIC SPECIFICATIONS
RT W-545
AMS 5743C
BT PUBLIC SPECIFICATIONS
RT AM 355
AMS 5744
BT PUBLIC SPECIFICATIONS
RT AM 355
AMS 5745
BT PUBLIC SPECIFICATIONS
RT AM 350
AMS 5746
BT PUBLIC SPECIFICATIONS
RT D-979
AMS 5750A
BT PUBLIC SPECIFICATIONS
RT HASTELLOY C
AMS 5751A
BT PUBLIC SPECIFICATIONS
RT UDIMET 500
AMS 5753
BT PUBLIC SPECIFICATIONS
RT UDIMET 500
AMS 5754E
BT PUBLIC SPECIFICATIONS
RT HASTELLOY X
AMS 5756A
BT PUBLIC SPECIFICATIONS
RT M-252
AMS 5757A
BT PUBLIC SPECIFICATIONS
RT M-252
AMS 5759C
BT PUBLIC SPECIFICATIONS
RT L605
AMS 5765A
BT PUBLIC SPECIFICATIONS
RT S-816

AMS 5768E
 BT PUBLIC SPECIFICATIONS
 RT N-155
 AMS 5769
 BT PUBLIC SPECIFICATIONS
 RT N-155
 AMS 5770B
 BT PUBLIC SPECIFICATIONS
 RT S-590
 AMS 5774
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 RT AM 350
 AMS 5775
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 RT AM 350
 AMS 5779
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 RT INCONEL ALLOY X-750
 AMS 5780
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 RT AM 355
 AMS 5781
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 RT AM 355
 AMS 5788
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 RT STELLITE 6
 AMS 5794A
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 RT N-155
 AMS 5795B
 BT PUBLIC SPECIFICATIONS
 RT N-155
 AMS 5796
 BT PUBLIC SPECIFICATIONS
 RT L605
 AMS 5797
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 RT L605
 AMS 5798
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 RT HASTELLOY X
 AMS 5799
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 RT HASTELLOY X
 AMS 5800A
 BT PUBLIC SPECIFICATIONS
 RT RENE 41
 AMS 5804A
 BT PUBLIC SPECIFICATIONS
 RT A286
 AMS 5805A
 BT PUBLIC SPECIFICATIONS
 RT A286
 AMS 5817A
 BT PUBLIC SPECIFICATIONS
 RT GREEK ASCOLOY
 AMS 5825A
 BT PUBLIC SPECIFICATIONS
 RT 17-4PH
 AMS 5827
 BT PUBLIC SPECIFICATIONS
 RT 17-4PH
 AMS 5828
 BT PUBLIC SPECIFICATIONS
 RT WASPALOY
 AMS 5832
 BT PUBLIC SPECIFICATIONS
 RT INCONEL ALLOY 718
 AMS 6260G
 BT PUBLIC SPECIFICATIONS
 RT AISI 9310
 AMS 6265B
 BT PUBLIC SPECIFICATIONS
 RT AISI 9310
 AMS 6267
 BT PUBLIC SPECIFICATIONS
 RT AISI 9310

AMS 6274G
 BT PUBLIC SPECIFICATIONS
 RT AISI 8620
 AMS 6276B
 BT PUBLIC SPECIFICATIONS
 RT AISI 8620
 AMS 6277
 BT PUBLIC SPECIFICATIONS
 RT AISI 8620
 AMS 6280D
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 RT AISI 8630
 AMS 6281B
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 RT AISI 8630
 AMS 6282D
 BT PUBLIC SPECIFICATIONS
 RT AISI 8735
 AMS 6302A
 BT PUBLIC SPECIFICATIONS
 RT 17-22 A (S)
 AMS 6303
 BT PUBLIC SPECIFICATIONS
 RT 17-22 A (V)
 AMS 6320E
 BT PUBLIC SPECIFICATIONS
 RT AISI 8735
 AMS 6322E
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 RT AISI 8740
 AMS 6323D
 BT PUBLIC SPECIFICATIONS
 RT AISI 8740
 AMS 6324B
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 RT AISI 8740
 AMS 6325D
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 RT AISI 8740
 AMS 6327D
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 RT AISI 8740
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 RT AISI 4130
 AMS 6351A
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 RT AISI 4130
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 RT AISI 8630
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 RT AISI 8735
 AMS 6358B
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 RT AISI 8740
 AMS 6359B
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 AMS 6361
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 RT AISI 4130
 AMS 6362
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 RT AISI 4130
 AMS 6370E
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 RT AISI 4130
 AMS 6371C
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 RT AISI 4130
 AMS 6378
 BT PUBLIC SPECIFICATIONS
 RT AISI 4140

AMS 6379
 BT PUBLIC SPECIFICATIONS
 RT AISI 4140
 AMS 6381B
 BT PUBLIC SPECIFICATIONS
 RT AISI 4140
 AMS 6382E
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 RT AISI 4140
 AMS 6385A
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 RT 17-22 A (S)
 AMS 6390
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 RT AISI 4140
 AMS 6395
 BT PUBLIC SPECIFICATIONS
 RT AISI 4140
 AMS 6412E
 BT PUBLIC SPECIFICATIONS
 RT AISI 4337
 AMS 6413C
 BT PUBLIC SPECIFICATIONS
 RT AISI 4337
 AMS 6414
 BT PUBLIC SPECIFICATIONS
 RT AISI 4340
 AMS 6415F
 BT PUBLIC SPECIFICATIONS
 RT AISI 4340
 AMS 6418C
 BT PUBLIC SPECIFICATIONS
 RT HY-TUF
 AMS 6436
 BT PUBLIC SPECIFICATIONS
 RT 17-22 A (V)
 AMS 6440D
 BT PUBLIC SPECIFICATIONS
 RT AISI 52100
 AMS 6441B
 BT PUBLIC SPECIFICATIONS
 RT AISI 52100
 AMS 6444B
 BT PUBLIC SPECIFICATIONS
 RT AISI 52100
 AMS 6447
 BT PUBLIC SPECIFICATIONS
 RT AISI 52100
 AMS 6448B
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 RT AISI 6150
 AMS 6450C
 BT PUBLIC SPECIFICATIONS
 RT AISI 6150
 AMS 6455B
 BT PUBLIC SPECIFICATIONS
 RT AISI 6150
 AMS 6458B
 BT PUBLIC SPECIFICATIONS
 RT 17-22 A (S)
 AMS 6466
 BT PUBLIC SPECIFICATIONS
 RT TYPE 502
 AMS 6467
 BT PUBLIC SPECIFICATIONS
 RT TYPE 502
 AMS 6530D
 BT PUBLIC SPECIFICATIONS
 RT AISI 8630
 AMS 6535C
 BT PUBLIC SPECIFICATIONS
 RT AISI 8735
 AMS 6550D
 BT PUBLIC SPECIFICATIONS
 RT AISI 8630
 AMS 7220C
 BT PUBLIC SPECIFICATIONS
 RT 1100

AMS 7223
 BT PUBLIC SPECIFICATIONS
 RT 2024
 AMS 7232E
 BT PUBLIC SPECIFICATIONS
 RT INCONEL ALLOY 600
 AMS 7235
 BT PUBLIC SPECIFICATIONS
 RT A286
 AMS 7236
 BT PUBLIC SPECIFICATIONS
 RT L605
 AMS 7237
 BT PUBLIC SPECIFICATIONS
 RT HASTELLOY X
 AMS 7240B
 BT PUBLIC SPECIFICATIONS
 RT AISI 1060
 AMS 7301B
 BT PUBLIC SPECIFICATIONS
 RT AISI 6150
 AMS 7811A
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 RT MO-.5Ti
 AMS 7813
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 RT MO-.5Ti
 AMS 7817
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 AMS 7819
 BT PUBLIC SPECIFICATIONS
 RT MO-.5Ti
 AMS 7821
 BT PUBLIC SPECIFICATIONS
 RT MO-.5Ti
 AMS 7847
 BT PUBLIC SPECIFICATIONS
 RT TA-10W
 AMS 7848
 BT PUBLIC SPECIFICATIONS
 RT TA-10W
 AS30
 20W-1ZR-BAL (CB)
 UF CB-20W-1ZR
 BT COLUMBIUM
 AS55
 5W-1ZR-BAL (CB)
 UF CB-5W-1ZR
 BT COLUMBIUM
 AZ31B
 3AL-1ZN-BAL (MG)
 BT MAGNESIUM
 RT AMS 4375E
 RT AMS 4376B
 RT AMS 4377C
 RT QQ-M-44
 AZ61A
 6AL-1ZN-BAL (MG)
 BT MAGNESIUM
 RT AMS 4350G
 AZ63A
 6AL-3ZN-BAL (MG)
 UF DOW METAL H
 BT MAGNESIUM
 RT AMS 4420H
 RT AMS 4422J
 RT AMS 4424F
 RT QQ-M-56
 AZ80A
 8.5AL-.5ZN-BAL (MG)
 BT MAGNESIUM
 RT AMS 4360C
 RT QQ-M-40
 AZ81A
 7.5AL-.13MN-.70ZN-.01NI-.25SI-.10CU-BAL (MG)
 BT MAGNESIUM

AZ91A
 9AL-.7ZN-BAL (MG)
 UF DOW METAL R
 BT MAGNESIUM
 RT AMS 4490D
 AZ92A
 9AL-2ZN-BAL (MG)
 BT MAGNESIUM
 RT AMS 4395A
 RT AMS 4434F
 RT AMS 4453
 RT AMS 4484E
 RT AMS 4484F
 RT MIL-R-6944
 RT QQ-M-55
 RT QQ-M-56
 A51S
 USE 6151
 A78S
 USE 7178
 A110AT
 USE TI-5AL-2.5SN
 A-140
 8CU-6MG-.5MN-.5NI-BAL (AL)
 BT ALUMINUM
 RT AMS 4227A

A286
 .05C-1.35MN-.50SI-15.0CR-26.0NI-1.3MO-2.0TI
 -.2AL-.015B-BAL (FE)
 BT IRON
 RT AMS 5525B
 RT AMS 5731B
 RT AMS 5732B
 RT AMS 5734A
 RT AMS 5735F
 RT AMS 5736C
 RT AMS 5737C
 RT AMS 5804A
 RT AMS 5805A
 RT AMS 7235

A-295AT
 USE TI-5AL-2.5SN ELI

A 356
 7SI-.3MG-BAL (AL)
 BT ALUMINUM
 RT AMS 4218B
 RT MIL-C-21180

BASE MATERIAL
 NT ALUMINUM (AL)
 NT BERYLLIUM (BE)
 NT BORON (B)
 NT CHROMIUM (CR)
 NT COBALT (CO)
 NT COLUMBIUM (CB)
 NT COPPER (CU)
 NT IRON (FE)
 NT MAGNESIUM (MG)
 NT MOLYBDENUM (MO)
 NT NICKEL (NI)
 NT RHENIUM (RE)
 NT STEEL (ST)
 NT TANTALUM (TA)
 NT TITANIUM (TI)
 NT TUNGSTEN (W)
 NT VANADIUM (V)
 NT ZIRCONIUM (ZR)

BE-CU

BT COPPER

BERYLCO 440

1.95BE-0.50TI-BAL (NI)
 BT NICKEL

BERYLLIUM BASE ALLOYS

BERYLLIUM (BE)

NT I-400
 NT LOCKALLOY
 NT S-100B
 NT S-200
 NT S-200B
 BT BASE MATERIAL

BORON (B)
 BT BASE MATERIAL

B33

5V-BAL (CB)
 UF CB-5V
 BT COLUMBIUM

B66

5V-5MO-1ZR-BAL (CB)
 UF CB-5V-5MO-1ZR
 BT COLUMBIUM

B88

28W-2HF-0.07C-BAL (CB)
 UF XB88
 BT COLUMBIUM

B-120VCA

USE TI-13V-11CR-3AL

B195

4.5CU-SI-BAL (AL)
 BT ALUMINUM
 RT AMS 4282E
 RT AMS 4283D
 RT QQ-A-596

B-1900

.10C-8.0CR-10.0CO-6.0MO-1.0TI-6.0AL-.015B
 -.10ZR-4.0TA-BAL (NI)
 BT NICKEL

CB-1ZR

1ZR-BAL (CB)
 BT COLUMBIUM

CB-5V

USE B33

CB-5V-5MO-1ZR

USE B66

CB-5W-1ZR

USE AS55

CB-5ZR

USE D14

CB-10HF-1TI-0.5ZR

USE C103

CB-10TA-10W

USE SCB291

CB-10TI-5ZR

USE D36

CB-10TI-10MO-0.1C

USE D31

CB-10W-1ZR-0.1C

USE D43

CB-10W-2.5ZR

USE CB752

CB-10W-10HF

USE C129

CB-15W-5MO-1ZR

USE F48

CB-15W-5MO-5TI-1ZR

USE F50

CB-20W-1ZR

USE AS30

CB-20W-10TI-6MO

USE D41

CB-28TA-10W-1ZR

USE FS85

CB-33TA-1ZR

USE FS82

CB74

USE CB752

CB132

20TA-15W-5MO-RAL (CB)

BT COLUMBIUM

CB132M
 20TA-15W-5MO-ZR-C-BAL (CB)
 BT COLUMBIUM
 CB752
 10W-2.5ZR-BAL (CB)
 UF CB-10W-2.5ZR
 UF CB74
 BT COLUMBIUM
 CG 27
 38NI-13CR-5.7MO-2.5TI-1.6AL-.7CB-.01B-BAL (FE)
 BT NICKEL

CHROMIUM BASE ALLOYS

CHROMIUM (CR)
 NT ALLOY E
 NT CHROME 30
 NT CR-RE
 BT BASE MATERIAL
 CHROME 30
 CR-6.0MG0
 BT CHROMIUM

COBALT BASE ALLOYS

COBALT (CO)
 NT CO-10FE-2TH02
 NT CO-30NI
 NT HAYNES ALLOY NO. 151
 NT L605
 NT MAR-M302
 NT MAR-M322
 NT MAR-M500
 NT STELLITE 6
 NT S-816
 NT TD-COBALT
 NT TD-COBALT-MO
 NT VIYALLIUM
 NT V-36
 NT WI-52
 NT X-40
 BT BASE MATERIAL

COLUMBIUM BASE ALLOYS

COLUMBIUM (CB)
 UF NIOBIUM
 NT AS30
 NT AS55
 NT B33
 NT B66
 NT B88
 NT CB-1ZR
 NT CB132
 NT CB132M
 NT CB752
 NT C103
 NT C104
 NT C129
 NT C129Y
 NT D14
 NT D31
 NT D36
 NT D41
 NT D43
 NT D43Y
 NT FS82
 NT FS85
 NT F48
 NT F50
 NT SCB291
 NT SU 16
 BT BASE MATERIAL
 COPPER (CU)
 NT BE-CU
 NT SUPERSTON 40
 BT BASE MATERIAL

CO-10FE-2TH02
 10FE-2TH02-BAL (CO)
 BT COBALT
 CO-30NI
 30NI-BAL (CO)
 BT COBALT
 CR-RE
 BT CHROMIUM
 C103
 10HF-1TI-.5ZR-BAL (CB)
 UF CB-10HF-1TI-.5ZR
 BT COLUMBIUM
 C104
 5HF-10TI-BAL (CB)
 BT COLUMBIUM
 C-110M
 USE TI-8MN
 C-115AMOV
 USE TI-4AL-3MO-1V
 C120AV
 USE TI-6AL-4V
 C129
 10W-10HF-BAL (CB)
 UF CB-10W-10HF
 BT COLUMBIUM
 C129Y
 BT COLUMBIUM
 C-130AM
 USE TI-4AL-4MN
 C355
 5SI-1.3CU-.5MG-BAL (FE)
 BT ALUMINUM
 RT AMS 4215B
 RT MIL-C-21180
 DISCALOY
 .04C-.90MN-.80SI-13.5CR-26.0NI-2.7MO-1.7TI
 -.1AL-.005B-BAL (FE)
 BT STEEL
 RT AMS 5733D
 DOW METAL N
 USE AZ63A
 DOW METAL R
 USE AZ91A
 D6A
 .46C-1.0CR-1.0MO-.55NI-BAL (FE)
 BT STEEL
 D6AC
 .48C-.75MN-.22SI-1.05CR-.55NI-1.0MO-.07V-BAL (FE)
 BT STEEL
 D14
 5ZR-BAL (CB)
 UF CB-5ZR
 BT COLUMBIUM
 D31
 10TI-10MO-.1C-BAL (CB)
 UF CB-10TI-10MO-.1C
 BT COLUMBIUM
 D36
 10TI-5ZR-BAL (CB)
 UF CB-10TI-5ZR
 BT COLUMBIUM
 D40
 USE F48
 D41
 20W-10TI-6MO-BAL (CB)
 UF CB-20W-10TI-6MO
 BT COLUMBIUM
 D43
 10W-1ZR-.1C-BAL (CB)
 UF CB-10W-1ZR-.0.1C
 UF X-110
 BT COLUMBIUM
 D43Y
 BT COLUMBIUM

D-979
 .05C-.25MN-.20SI-15.0CR-4.0MO-4.0W-27.3FE
 -3.0TI-1.0AL-.010BBAL (NI)
 BT NICKEL
 RT AMS 5509
 RT AMS 5746
 EK31XA
 3DI-.5ZR-BAL (MG)
 BT MAGNESIUM
 EZ33A
 3RE-2.5ZN-.6ZR-BAL (MG)
 BT MAGNESIUM
 RT AMS 4396
 RT AMS 4442A
 RT QQ-M-56
 FF-W-84
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 1060
 FS82
 33TA-1ZR-BAL (CB)
 UF CB-33TA-1ZR
 BT COLUMBIUM
 FS85
 28TA-10W-1ZR-BAL (CB)
 UF CB-28TA-10W-1ZR
 BT COLUMBIUM
 F18S
 USE 2618
 F48
 15W-5MO-1ZR-BAL (CB)
 UF CB-15W-5MO-1ZR
 UF D40
 BT COLUMBIUM
 F50
 15W-5MO-STI-1ZR-BAL (CB)
 UF CB-15W-5MO-STI-1ZR
 BT COLUMBIUM
 GMR 235-D
 .15C-15.5CR-5.0MO-4.5FE-2.5TI-3.5AL-.050B-BAL (NI)
 BT NICKEL
 GREEK ASCOLOY
 13CR-3W-2NI-BAL (FE)
 UF 418 SPECIAL
 BT STEEL
 RT AMS 5354B
 RT AMS 5508A
 RT AMS 5616D
 RT AMS 5817A
 HASTELLOY B
 28MO-5FE-.4V-BAL (NI)
 BT NICKEL
 RT AMS 5396
 HASTELLOY C
 17MO-15CR-6FE-5W-BAL (NI)
 BT NICKEL
 RT AMS 5388B
 RT AMS 5389A
 RT AMS 5530C
 RT AMS 5750A
 HASTELLOY R-235
 15.5CR-10FE-5.5MO-2.5TI-2AL-BAL (NI)
 BT NICKEL
 HASTELLOY X
 .10C-.50MN-.50SI-22.0CR-1.5CO-9.0MO-.6W-18.5FE
 -BAL (NI)
 BT NICKEL
 RT AMS 5390
 RT AMS 5536E
 RT AMS 5587A
 RT AMS 5588A
 RT AMS 5754E
 RT AMS 5798
 RT AMS 5799
 RT AMS 7237
 HAYNES ALLOY NO.151
 20CR-13W-.05B-BAL (CO)
 BT COBALT
 HA-5137
 USE TI-5AL-2.5SN
 HA-5137ELI
 USE TI-5AL-2.5SN ELI
 HA-5158
 USE TI-6AL-6V-2SN
 HA-6510
 USE TI-6AL-4V
 HA-6510ELI
 USE TI-6AL-4V ELI
 HA-8116
 USE TI-8AL-1MO-1V
 HK31A
 3TH-.7ZR-BAL (MG)
 BT MAGNESIUM
 RT AMS 4384C
 RT AMS 4385D
 RT AMS 4445B
 RT MIL-M-26075
 RT QQ-M-56
 HM21A
 2TH-.8MN-BAL (MG)
 BT MAGNESIUM
 RT AMS 4363A
 RT AMS 4383
 RT AMS 4390D
 RT MIL-M-8917
 HM31A
 3TH-1.5MN-BAL (MG)
 BT MAGNESIUM
 RT AMS 4388A
 RT AMS 4389B
 RT MIL-M-8916
 HNM
 .3C-18.5CR-9.5NI-3.5MN-BAL (FE)
 BT STEEL
 HP-9-4-20
 9NI-4CO-.20C
 UF 9-4-20
 BT STEEL
 HP-9-4-25
 9NI-4CO-.25C
 UF 9-4-25
 BT STEEL
 HP-9-4-45
 9NI-4CO-.45C
 UF 9-4-45
 BT STEEL
 HS25
 USE L605
 HY-TUF
 .25C-1.8NI-1.5SI-.1.3MN-.4MO-BAL (FE)
 BT STEEL
 RT AMS 6418C
 RT MIL-S-7108
 HZ32A
 3.3TH-2.1ZN-.8ZR-BAL (MG)
 BT MAGNESIUM
 RT AMS 4447A
 RT QQ-M-56
 H-11 MODIFIED
 .4C-5CR-1.3MO-.5V-BAL (FE)
 UF AISI 610
 UF MODIFIED AISI TYPE H-11 STEEL
 UF TYPE H-11 MODIFIED STEEL
 BT STEEL
 IMI 679
 USE TI-679
 INCOLOY
 USE INCOLOY ALLOY 800
 INCOLOY ALLOY 800
 46FE-32NI-20.5CR-.75MN-.35SI-.30CU-.04C-.007S
 UF INCOLOY
 BT STEEL

INCOLOY ALLOY 901

34FE-10.5CR-6.2MO-2.5TI-.45MN-.40SI-.25AL
-.10CU-.010S-.05C-BAL(NI)

BT NICKEL

RT AMS 5660B

INCONEL ALLOY X-750

.04C-.70MN-.30SI-15.0CR-.9CB-6.8FE-2.5TI-.8AL

-BAL(NI)

BT NICKEL

RT AMS 5542G

RT AMS 5582

RT AMS 5598

RT AMS 5667F

RT AMS 5668D

RT AMS 5669

RT AMS 5671

RT AMS 5698

RT AMS 5699B

PT AMS 5779

RT JAN-W-562

RT MIL-E-6844

RT MIL-N-7786

INCONEL ALLOY 100

.15C-10.0CR-15.0CO-3.0MO-5.5AL-.018-.05ZR-1.0V

-5TI-BAL(NI)

UF IN-100

BT NICKEL

RT AMS 5397

INCONEL ALLOY 102

.06C-15CR-3MO-3W-3CB-7FE-.6TI-.4AL-.005B-.03ZR

-.02MG-BAL(NI)

UF IN-102

BT NICKEL

INCONEL ALLOY 550

USE INCONEL ALLOY 751

INCONEL ALLOY 600

.04C-.20MN-.20SI-15.8CR-7.2FE-BAL(NI)

BT NICKEL

RT AMS 5540G

RT AMS 5580D

RT AMS 5665G

RT AMS 5687F

RT AMS 7232E

RT MIL-N-6710

RT MIL-N-6840

RT MIL-T-7840

RT QQ-W-390

INCONEL ALLOY 625

.05C-.15MN-.30SI-22.0CR-9.0MO-4.0CB-3.0FE-.2TI

-.2AL-BAL(NI)

BT NICKEL

INCONEL ALLOY 700

.12C-.10MN-.30SI-15.0CR-28.5CO-3.7MO-.7FE

-.2TI-3.0AL-BAL(NI)

BT NICKFL

INCONEL ALLOY 702

.04C-.05MN-.20SI-15.6CR-.4FE-.7TI-3.4AL-BAL(NI)

BT NICKEL

RT AMS 5550A

INCONEL ALLOY 713

.12C-12.5CR-4.2MO-2.0CB-.8TI-6.1AL-.012B-.10ZR

-BAL(NI)

UF INCONEL ALLOY 713C

UF INCONEL 713C

UF 713C

BT NICKEL

RT AMS 5391A

INCONEL ALLOY 713C

USE INCONEL ALLOY 713

INCONEL ALLOY 713LC

.05C-12.0CR-4.5MO-2.0CB-.6TI-5.9AL-.010B-.10ZR

-BAL(NI)

BT NICKEL

INCONEL ALLOY 718

.04C-.20MN-.30SI-18.6CR-3.1MO-5.0CB-18.5FE

-.9TI-.4AL-BAL(NI)

BT NICKEL

RT AMS 5383

RT AMS 5541A

RT AMS 5589

RT AMS 5590

RT AMS 5596A

RT AMS 5597

RT AMS 5662A

RT AMS 5663A

RT AMS 5664

RT AMS 5832

INCONEL ALLOY 722

.04C-.55MN-.20SI-15.0CR-6.5FE-2.4TI-.6AL-BAL(NI)

BT NICKEL

INCONEL ALLOY 751

15CR-7FE-2.3TI-1AL-1CB-BAL(NI)

UF INCONEL ALLOY 550

BT NICKEL

INCONEL 713C

USE INCONEL ALLOY 713

IN-100

USE INCONEL ALLOY 100

IN-102

USE INCONEL ALLOY 102

IRON BASE ALLOYS (SUPERALLOYS)

IRON (FE)

NT A-286

NT LAPELLOY

NT N-155

BT BASE MATERIAL

I-400

92.0BE-4.25BEO-.20AL-.50C-.30FE-.10MG-.15SI

BT BERYLLIUM

JAN-W-562

BT GOVERNMENT SPECIFICATIONS

RT INCONEL ALLOY X-750

LAPELLOY

.30C-1.10MN-.50SI-11.5CR-.50NI-2.75MO-.25V

-BAL (FE)

BT IRON

LA141A

14LI-1.25AL-BAL(MG)

BT MAGNESIUM

RT AMS 4386

LOCKALLOY

62.0BE-38.0AL

BT BERYLLIUM

L605

.10C-1.5MN-.50SI-20.0CR-10.0NI-15.0W-BAL(CO)

UF HS25

BT COBALT

RT AMS 5537B

RT AMS 5759C

RT AMS 5796

RT AMS 5797

RT AMS 7236

RT MIL-E-6844

RT MIL-R-5031

MAGNESIUM BASE ALLOYS.

MAGNESIUM (MG)

NT AZ31B
 NT AZ61A
 NT AZ63A
 NT AZ80A
 NT AZ81A
 NT AZ91A
 NT AZ92A
 NT EK31XA
 NT EZ33A
 NT HK31A
 NT HM21A
 NT HM31A
 NT HZ32A
 NT LA141A
 NT M1A
 NT OE22A
 NT ZE10A
 NT ZK51A
 NT ZK60
 BT BASE MATERIAL
 MARAGING (180)
 12NI-5CR-3MO-(TYS--180 KSI)
 BT STEEL
 MARAGING (200)
 18NI-8.5CO-3.25MO-0.20TI-(TYS--200 KSI)
 UF RSM-200
 BT STEEL
 MARAGING (250)
 18NI-7.75CO-4.85MO-0.4TI-(TYS--250 KSI)
 UF RSM-250
 BT STEEL
 MARAGING (280)
 BT STEEL
 MARAGING (300)
 18.5NI-8.75CO-4.9MO-0.65TI-(TYS--300 KSI)
 UF RSM-300
 BT STEEL
 MAR-M200
 .15C-9.0CR-10.0CO-12.5W-1.0CB-2.0TI-5.0AL
 -.015B-.05ZR-BAL (NI)
 UF SM200
 BT NICKEL
 MAR-M246
 .15C-9.0CR-10.0CO-2.5MO-10.0W-1.5TI-5.5AL
 -.015B-.05ZR-1.5TA-BAL (NI)
 BT NICKEL
 MAR-M302
 .85C-21.5CR-10.0MO-.005B-.20ZR-9.0TA-BAL (CO)
 UF SM302
 BT COBALT
 MAR-M322
 1.0C-.10MN-.10SI-21.5CR-9.0W-4.5TA-2.5ZR-.75TI
 -.75FE-BAL (CO)
 UF SM322
 BT COBALT
 MAR-M509
 21.5CR-10NI-7W-3.5TA-.6C-.5ZR-.2TI-BAL (CO)
 BT COBALT

MIL (MILITARY SPECIFICATIONS)

MIL-A-8701
 BT GOVERNMENT SPECIFICATIONS
 RT 5083
 MIL-A-8825
 BT GOVERNMENT SPECIFICATIONS
 RT 7079
 MIL-A-8877
 BT GOVERNMENT SPECIFICATIONS
 RT 7079
 MIL-A-8920
 BT GOVERNMENT SPECIFICATIONS
 RT 2219
 MIL-A-9186
 BT GOVERNMENT SPECIFICATIONS
 RT 7178

MIL-A-17357
 BT GOVERNMENT SPECIFICATIONS
 RT 5154
 MIL-A-17358
 BT GOVERNMENT SPECIFICATIONS
 RT 5083
 MIL-C-21180
 BT GOVERNMENT SPECIFICATIONS
 RT A 356
 MIL-C-21180
 BT GOVERNMENT SPECIFICATIONS
 RT C355
 MIL-E-6844
 BT GOVERNMENT SPECIFICATIONS
 RT N-155
 MIL-E-6844
 BT GOVERNMENT SPECIFICATIONS
 RT INCONEL ALLOY X-750
 MIL-E-6844
 BT GOVERNMENT SPECIFICATIONS
 RT L605
 MIL-E-6844
 BT GOVERNMENT SPECIFICATIONS
 RT NICHROME V
 MIL-M-8916
 BT GOVERNMENT SPECIFICATIONS
 RT HM31A
 MIL-M-8917
 BT GOVERNMENT SPECIFICATIONS
 RT HM21A
 MIL-N-26075
 BT GOVERNMENT SPECIFICATIONS
 RT HK31A
 MIL-N-6710
 BT GOVERNMENT SPECIFICATIONS
 RT INCONEL ALLOY 600
 MIL-N-6840
 BT GOVERNMENT SPECIFICATIONS
 RT INCONEL ALLOY 600
 MIL-N-7786
 BT GOVERNMENT SPECIFICATIONS
 RT INCONEL ALLOY X-750
 MIL-R-5031
 BT GOVERNMENT SPECIFICATIONS
 RT N-155
 MIL-R-5031
 BT GOVERNMENT SPECIFICATIONS
 RT L605
 MIL-R-5031
 BT GOVERNMENT SPECIFICATIONS
 RT NICHROME V
 MIL-R-5674
 BT GOVERNMENT SPECIFICATIONS
 RT 2024
 MIL-R-5674
 BT GOVERNMENT SPECIFICATIONS
 RT 1100
 MIL-R-6944
 BT GOVERNMENT SPECIFICATIONS
 RT AZ92A
 MIL-S-5626
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 4140
 MIL-S-6049
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 8740
 MIL-S-6050
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 8630
 MIL-S-6098
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 9735
 MIL-S-6758
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 4130
 MIL-S-7108
 BT GOVERNMENT SPECIFICATIONS
 RT HY-TUF

MIL-S-7420
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 52100
 MIL-S-8503
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 6150
 MIL-S-8690
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 8620
 MIL-S-8840
 BT GOVERNMENT SPECIFICATIONS
 RT AM 350
 MIL-S-18728
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 8630
 MIL-S-18729
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 4130
 MIL-S-18733
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 8735
 MIL-S-25043
 BT GOVERNMENT SPECIFICATIONS
 RT 17-7PH
 MIL-T-5066
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 1025
 MIL-T-6732
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 8630
 MIL-T-6733
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 8735
 MIL-T-6734
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 8630
 MIL-T-6736
 BT GOVERNMENT SPECIFICATIONS
 RT AISI 4130
 MIL-T-7081
 BT GOVERNMENT SPECIFICATIONS
 RT 6061
 MIL-T-7840
 BT GOVERNMENT SPECIFICATIONS
 RT INCONEL ALLOY 600
 MIL-T-9046
 BT GOVERNMENT SPECIFICATIONS
 RT TI-6AL-4V
 MIL-T-9046
 BT GOVERNMENT SPECIFICATIONS
 RT TI-5AL-2.5SN
 MIL-T-9047
 BT GOVERNMENT SPECIFICATIONS
 RT TI-2CR-2FE-2MO
 MIL-T-9047
 BT GOVERNMENT SPECIFICATIONS
 RT TI-4AL-4MN
 MIL-T-9047
 BT GOVERNMENT SPECIFICATIONS
 RT TI-5AL-2.5SN
 MIL-T-9047
 BT GOVERNMENT SPECIFICATIONS
 RT TI-6AL-4V
 MIL-T-9046
 BT GOVERNMENT SPECIFICATIONS
 RT TI-8MN
 MIL-W-6712
 BT GOVERNMENT SPECIFICATIONS
 RT 1100
 MODIFIED AISI TYPE H-11 STEEL
 USE H-11 MODIFIED

MOLYBDENUM BASE ALLOYS

MOLYBDENUM (MO)
 NT MO-.5TI
 NT TZC
 NT TZM
 NT WZM
 BT BASE MATERIAL
 MONEL ALLOY K-500
 29CU-3AL-.5TI-BAL (NI)
 UF ALLOY K-500
 UF MONEL K-500
 BT NICKEL
 MONEL K-500
 USE MONEL ALLOY K-500
 MO-.5TI
 .5TI-BAL (MO)
 BT MOLYBDENUM
 RT AMS 7811A
 RT AMS 7813
 RT AMS 7817
 RT AMS 7819
 RT AMS 7821
 MO-.5TI-.08ZR-.03C
 USE TZM
 MO-1.2TI-.25ZR-.15C
 USE TZC
 MO-25W-.1ZR-.03C
 USE WZM
 MST-4AL-3MO-1V
 USE TI-4AL-3MO-1V
 MST-5AL-2.5SN
 USE TI-5AL-2.5SN
 MST-5AL-2.5SN ELI
 USE TI-5AL-2.5SN ELI
 MST-6AL-4V
 USE TI-6AL-4V
 MST-6AL-6V-2SN
 USE TI-6AL-6V-2SN
 MST-7AL-12ZR
 USE TI-7AL-12ZR
 MST-13V-11CR-3AL
 USE TI-13V-11CR-3AL
 MST-811
 USE TI-8AL-1MO-1V
 MX-2
 USE AISI 4137 CO
 M1A
 1.2MN-.01NI-.30SI-.05CU-BAL (MG)
 BT MAGNESIUM
 M-22
 .13C-5.7CR-2.0MO-11.0W-6.3AL-.60ZR-3.0TA-BAL (NI)
 BT NICKEL
 M-252
 .15C-.50MN-.50SI-20.0CR-10.0CO-10.0MO-2.6TI
 -1.0AL-.005B-BAL (NI)
 BT NICKEL
 RT AMS 5551
 RT AMS 5756A
 RT AMS 5757A
 NICHROME V
 20CR-BAL (NI)
 BT NICKEL
 RT AMS 5676
 RT AMS 5677
 RT AMS 5682A
 RT MIL-E-6844
 RT MIL-R-5031

NICKEL BASE ALLOYS

NICKEL (NI)

NT AF 1753
 NT BERYLCO 440
 NT B-1900
 NT CG 27
 NT D-979
 NT GMR 235-D
 NT HASTELLOY B
 NT HASTELLOY C
 NT HASTELLOY R-235
 NT HASTELLOY X
 NT INCOLOY ALLOY 901
 NT INCONEL ALLOY X-750
 NT INCONEL ALLOY 100
 NT INCONEL ALLOY 102
 NT INCONEL ALLOY 600
 NT INCONEL ALLOY 625
 NT INCONEL ALLOY 700
 NT INCONEL ALLOY 702
 NT INCONEL ALLOY 713
 NT INCONEL ALLOY 713LC
 NT INCONEL ALLOY 718
 NT INCONEL ALLOY 722
 NT INCONEL ALLOY 751
 NT HAR-M200
 NT HAR-M246
 NT MONEL ALLOY K-500
 NT M-22
 NT M-252
 NT NICHROME V
 NT NICROTUNG
 NT NIMONIC 80A
 NT NIMONIC 90
 NT NIMONIC 105
 NT NIMONIC 115
 NT PORL 162
 NT REFRACTALLOY 26
 NT RENE 41
 NT RENE 42
 NT R-235
 NT TD-NICKEL
 NT TD-NICKEL-CR
 NT TD-NICKEL-MO
 NT TRW 1900
 NT UDIMET 500
 NT UDIMET 520
 NT UDIMET 630
 NT UDIMET 700
 NT WASPALOY
 BT BASE MATERIAL
 NICROTUNG
 .10C-12.0CR-10.0CO-8.0W-4.0TI-4.0AL-.050B
 -.052R-BAL (NI)
 BT NICKEL
 NIMONIC 80A
 .06C-.10MN-.70SI-10.5CR-1.1CO-2.5FE-1.3AL-BAL (NI)
 BT NICKEL
 NIMONIC 90
 .07C-.50MN-.70SI-19.5CR-18.0CO-2.4TI-1.4AL-BAL (NI)
 BT NICKEL
 NIMONIC 105
 20CO-15CR-5MO-4.5AL-1.3TI-BAL (NI)
 BT NICKEL
 NIMONIC 115
 .15C-15.0CR-15.0CO-3.5MO-4.0TI-5.0AL-BAL (NI)
 BT NICKEL
 NIOBIUM
 USE COLUMBIUM
 NITRALLOY 135 MOD.
 0.4C-1.6CR-1.1AL-0.6MN-0.35MO-BAL (FE)
 BT STEEL

N-155

.15C-1.5MN-.50SI-21.0CR-20.0NI-20.0CO-3.0MO
 -2.5W-1.0CB-TA-.15N-BAL (FE)
 BT IRON
 RT AMS 5376B
 RT AMS 5532B
 RT AMS 5565
 RT AMS 5768E
 RT AMS 5769
 RT AMS 5794A
 RT AMS 5795B
 RT MIL-E-6844
 RT MIL-R-5031
 PORL 162
 .12C-10.0CR-4.0MO-2.0W-1.0CB-1.0TI-6.5AL-.020B
 -.102R-2.0TA-BAL (NI)
 BT NICKEL
 PH13-8MO
 13CR-8NI-2MO-BAL (FE)
 BT STEEL
 PH14-8MO
 14CR-8NI-2.5MO-AL-BAL (FE)
 BT STEEL
 PH15-7MO
 15CR-7NI-2.5MO-BAL (FE)
 UF AISI 632
 BT STEEL
 RT AMS 5520A
 RT AMS 5657
 QE22A
 2.5AG-2.00I-.42R-BAL (MG)
 BT MAGNESIUM
 RT AMS 4418B

QQ (FEDERAL SPECIFICATIONS FOR METALS)

QQ-A-261
 BT GOVERNMENT SPECIFICATIONS
 RT 2014
 QQ-A-266
 BT GOVERNMENT SPECIFICATIONS
 RT 2014
 QQ-A-267
 BT GOVERNMENT SPECIFICATIONS
 RT 2024
 QQ-A-268
 BT GOVERNMENT SPECIFICATIONS
 RT 2024
 QQ-A-270
 BT GOVERNMENT SPECIFICATIONS
 RT 6061
 QQ-A-277
 BT GOVERNMENT SPECIFICATIONS
 RT 7075
 QQ-A-282
 BT GOVERNMENT SPECIFICATIONS
 RT 7075
 QQ-A-283
 BT GOVERNMENT SPECIFICATIONS
 RT 7075
 QQ-A-315
 BT GOVERNMENT SPECIFICATIONS
 RT 5052
 QQ-A-318
 BT GOVERNMENT SPECIFICATIONS
 RT 5052
 QQ-A-325
 BT GOVERNMENT SPECIFICATIONS
 RT 6061
 QQ-A-327
 BT GOVERNMENT SPECIFICATIONS
 RT 6061
 QQ-A-351
 BT GOVERNMENT SPECIFICATIONS
 RT 2017
 QQ-A-355
 BT GOVERNMENT SPECIFICATIONS
 RT 2024

QQ-A-359
BT GOVERNMENT SPECIFICATIONS
RT 3003
QQ-A-367
BT GOVERNMENT SPECIFICATIONS
RT 2014
QQ-A-367
BT GOVERNMENT SPECIFICATIONS
RT 2025
QQ-A-367
BT GOVERNMENT SPECIFICATIONS
RT 2618
QQ-A-367
BT GOVERNMENT SPECIFICATIONS
RT 6061
QQ-A-367
BT GOVERNMENT SPECIFICATIONS
RT 6151
QQ-A-367
BT GOVERNMENT SPECIFICATIONS
RT 7075
QQ-A-367
BT GOVERNMENT SPECIFICATIONS
RT 7079
QQ-A-430
BT GOVERNMENT SPECIFICATIONS
RT 5056
QQ-A-561
BT GOVERNMENT SPECIFICATIONS
RT 1100
QQ-A-596
BT GOVERNMENT SPECIFICATIONS
RT 8195
QQ-A-596
BT GOVERNMENT SPECIFICATIONS
RT 355
QQ-A-596
BT GOVERNMENT SPECIFICATIONS
RT 356
QQ-A-601
BT GOVERNMENT SPECIFICATIONS
RT 195
QQ-A-601
BT GOVERNMENT SPECIFICATIONS
RT 220
QQ-A-601
BT GOVERNMENT SPECIFICATIONS
RT 355
QQ-A-601
BT GOVERNMENT SPECIFICATIONS
RT 356
QQ-M-31A
BT GOVERNMENT SPECIFICATIONS
RT ZK60
QQ-M-40
BT GOVERNMENT SPECIFICATIONS
RT AZ80A
QQ-M-40
BT GOVERNMENT SPECIFICATIONS
RT ZK60
QQ-M-44
BT GOVERNMENT SPECIFICATIONS
RT AZ31B
QQ-M-55
BT GOVERNMENT SPECIFICATIONS
RT AZ92A
QQ-M-56
BT GOVERNMENT SPECIFICATIONS
RT AZ63A
QQ-M-56
BT GOVERNMENT SPECIFICATIONS
RT AZ92A
QQ-M-56
BT GOVERNMENT SPECIFICATIONS
RT EZ33A
QQ-M-56
BT GOVERNMENT SPECIFICATIONS
RT HK31A

QQ-M-56
BT GOVERNMENT SPECIFICATIONS
RT HZ32A
QQ-M-56
BT GOVERNMENT SPECIFICATIONS
RT ZK51A
QQ-V-390
BT GOVERNMENT SPECIFICATIONS
RT INCONEL ALLOY 600
QQ-W-470
BT GOVERNMENT SPECIFICATIONS
RT AISI 1090
REFRACTALLOY 26
.03C-.80MN-.10SI-18.0CR-20.0CO-3.2MO-16.0FE
-2.6TI-.2AL-BAL(NI)
BT NICKEL
RENE 41
.09C-.19.0CR-11.0CO-10.0MO-3.1TI-1.5AL-.005B
-BAL(NI)
BT NICKEL
RT AMS 5399
RT AMS 5545
RT AMS 5712B
RT AMS 5713B
RT AMS 5800A
RENE 62
1.25AL-2.3CB-2.5TI-9.0MB-15.0CR-22.5FE-.05C
-.010B-BAL(NI)
BT NICKEL
RHENIUM (RE)
BT BASE MATERIAL
RMI-811
USE TI-8AL-1MO-1V
ROCOLOY
USE AISI 4137 CO
R-235
.15C-15.5CR-5.5MO-10.0FE-2.5TI-2.0AL-BAL(NI)
BT NICKEL
RR-57
USE 2219
RR-58
USE 2618
RR-77
.40CO-.26SI-.47MN-2.63MG-5.39ZN-.30FE-BAL(AL)
BT ALUMINUM
RSM-200
USE MARAGING (200)
RSM-250
USE MARAGING (250)
RSM-300
USE MARAGING (300)
RS-110A
USE TI-8MN
RS-110C
USE TI-5AL-2.5SN
RS-110C-L
USE TI-5AL-2.5SN ELI
RS-115
USE TI-4AL-3MO-1V
RS-120A
USE TI-6AL-4V
RS-120 A-L
USE TI-6AL-4V ELI
RS-120B
USE TI-13V-11CR-3AL
RS-130
USE TI-4AL-4MN
RS 135B
USE TI-8AL-1MO-1V
RS140
USE TI-5AL-1.25FE-2.75CR
RS-811X
USE TI-8AL-1MO-1V
SAE 51416F
USE AISI 416 SE

JCB291
 10TA-10W-BAL (CB)
 UF CB-10TA-10W
 BT COLUMBIUM
 SM200
 USE MAR-M200
 SM302
 USE MAR-M302
 SM322
 USE MAR-M322
 STAINLESS W
 17CR-7NI-BAL (FE)
 BT STEEL
 STA-880
 12.5W-BAL (TA)
 UF TA-12.5W
 BT TANTALUM

STEEL BASE ALLOYS

STEEL (ST)
 NT AFC-77
 NT AF-71
 NT AISI 201
 NT AISI 301
 NT AISI 301N
 NT AISI 302
 NT AISI 303
 NT AISI 304
 NT AISI 304ELC
 NT AISI 305
 NT AISI 310
 NT AISI 314
 NT AISI 316
 NT AISI 316L
 NT AISI 317
 NT AISI 321
 NT AISI 347
 NT AISI 348
 NT AISI 403
 NT AISI 410
 NT AISI 416 SE
 NT AISI 416
 NT AISI 1025
 NT AISI 1045
 NT AISI 1060
 NT AISI 1090
 NT AISI 4130
 NT AISI 4137 CO
 NT AISI 4140
 NT AISI 4330 MOD
 NT AISI 4335V
 NT AISI 4337
 NT AISI 4340
 NT AISI 6150
 NT AISI 86845
 NT AISI 8620
 NT AISI 8630
 NT AISI 8735
 NT AISI 8740
 NT AISI 9310 H
 NT AISI 9310
 NT AISI 52100
 NT AM 350
 NT AM 355
 NT AM 362
 NT AM 363
 NT AM 367
 NT DISCALOY
 NT D6A
 NT D6AC
 NT GREEK ASCOLOY
 NT HNM
 NT HP-9-4-20
 NT HP-9-4-25
 NT HP-9-4-45
 NT HY-TUF
 NT H-11 MODIFIED

NT INCOLOY ALLOY 800
 NT MARAGING (180)
 NT MARAGING (200)
 NT MARAGING (250)
 NT MARAGING (280)
 NT MARAGING (300)
 NT NITRALLOY 135 MOD.
 NT PH13-8MO
 NT PH14-8MO
 NT PH15-7MO
 NT STAINLESS W
 NT S-590
 NT TYPE 202
 NT TYPE 420
 NT TYPE 422
 NT TYPE 431
 NT TYPE 440 (A), (B), (C)
 NT TYPE 502
 NT USS STRUX
 NT USS-12MOV
 NT USS 17-5 MNV
 NT VASCO Ma
 NT V-57
 NT W-545
 NT X-200
 NT 14-4PH
 NT 16-15-6
 NT 16-25-6
 NT 17-4PH
 NT 17-7PH
 NT 17-22 A (S)
 NT 17-22 A (V)
 NT 19-90L
 NT 19-70X
 NT 300H
 BT BASE MATERIAL
 STELLITE 6
 28CR-5W-1C-BAL (CO)
 BT COBALT
 RT AMS 5373A
 RT AMS 5387
 RT AMS 5788
 STELLITE 31
 USE X-40
 SUPERSTON 40
 BT COPPER
 SU 16
 BT COLUMBIUM
 S-1008
 BT BERYLLIUM
 S-200
 98.08E-2.08E0-.15C-.18FE-.08MG-.08SI
 BT BERYLLIUM
 S-2008
 98.78E-1.32BE0-.114C-.075AL-.0135CR-.13FE
 -.012MG-MN-NI-SI
 BT BERYLLIUM
 S-590
 20NI-20CR-20CO-4CB-4MO-4W-BAL (FE)
 BT STEEL
 RT AMS 5533A
 RT AMS 5770B
 S-816
 .38C-1.2MN-.40SI-20CR-20NI-4MO-4W-4CB-4FE-BAL (CO)
 BT COBALT
 RT AMS 5534A
 RT AMS 5765A

TANTALUM BASE ALLOYS

TANTALUM (TA)
 NT STA-880
 NT TA-W
 NT TA-W-MO
 NT TA-10W
 NT T 111
 NT T 222
 BT BASE MATERIAL

TA-W
 BT TANTALUM
 TA-W-MO
 BT TANTALUM
 TA-8W-2HF
 USE T 111
 TA-10W
 10W-BAL(TA)
 BT TANTALUM
 RT AMS 7847
 RT AMS 7848
 TA-10W-2,5HF
 USE T 222
 TA-12,5W
 USE STA-880
 TD-COBALT
 BT COBALT
 TD-COBALT-MO
 BT COBALT
 TD-NICKEL
 .01C-<.01MN-<.01SI-<.01CR-<.03CO-<.01MO-<.01FE
 -2,2THO2-BAL(NI)
 BT NICKEL
 TD-NICKEL-CR
 BT NICKEL
 TD-NICKEL-MO
 BT NICKEL

TITANIUM BASE ALLOYS

TITANIUM (TI)
 NT TI-2CR-2FE-2MO
 NT TI-4AL-3MO-1V
 NT TI-4AL-4MN
 NT TI-5AL-1,25FE-2,75CR
 NT TI-5AL-1,5CR-1,5FE-1MO
 NT TI-5AL-2,5SN
 NT TI-5AL-2,5SN ELI
 NT TI-5AL-4FE
 NT TI-5AL-5SN-5ZR
 NT TI-6AL-2MO
 NT TI-6AL-2SN-4ZR-2MO
 NT TI-6AL-4V
 NT TI-6AL-4V ELI
 NT TI-6AL-6V-2SN
 NT TI-6AL-6V-2,5SN
 NT TI-7AL-4MO
 NT TI-7AL-12ZR
 NT TI-8AL-1MO-1V
 NT TI-8AL-2CR-1TA
 NT TI-8MN
 NT TI-13V-11CR-3AL
 NT TI-16V-2,5AL
 NT TI-679
 BT BASE MATERIAL
 TI-2CR-2FE-2MO
 2CR-2FE-2MO-BAL(TI)
 BT TITANIUM
 RT AMS 4923A
 RT MIL-T-9047
 TI-4AL-3MO-1V
 UF C-115AMOV
 UF MST-4AL-3MO-1V
 UF RS-115
 BT TITANIUM
 RT AMS 4912
 RT AMS 4913
 TI-4AL-4MN
 4AL-4MN-BAL(TI)
 UF C-130AM
 UF RS-130
 BT TITANIUM
 RT AMS 4925B
 RT MIL-T-9047
 TI-5AL-1,25FE-2,75CR
 5AL-1,25FE-2,75CR-BAL(TI)
 UF RS140
 BT TITANIUM

TI-5AL-1,5CR-1,5FE-1MO
 5AL-1,5CR-1,5FE-1MO-BAL(TI)
 UF TI-155A
 BT TITANIUM
 TI-5AL-2,5SN
 5AL-2,5SN-BAL(TI)
 UF A110AT
 UF HA-5137
 UF MST-5AL-2,5SN
 UF RS-110C
 BT TITANIUM
 RT AMS 4910C
 RT AMS 4926B
 RT AMS 4953
 RT AMS 4966B
 RT MIL-T-9046
 RT MIL-T-9047
 TI-5AL-2,5SN ELI
 5AL-2,5SN-BAL(TI) EXTRA LOW INTERSTITIAL
 UF A-295AT
 UF HA-5137ELI
 UF MST-5AL-2,5SN ELI
 UF RS-110C-L
 BT TITANIUM
 RT AMS 4909A
 RT AMS 4924A
 TI-5AL-4FE
 5AL-4FE-CR-BAL(TI)
 BT TITANIUM
 TI-5AL-5SN-5ZR
 5AL-5SN-5ZR-BAL(TI)
 BT TITANIUM
 RT AMS 4968A
 TI-6AL-2MO
 6AL-2MO-BAL(TI)
 BT TITANIUM
 TI-6AL-2SN-4ZR-2MO
 6AL-2SN-4ZR-2MO-BAL(TI)
 BT TITANIUM
 TI-6AL-4V
 6AL-4V-BAL(TI)
 UF C120AV
 UF HA-6510
 UF MST-6AL-4V
 UF RS-120A
 BT TITANIUM
 RT AMS 4911A
 RT AMS 4928C
 RT AMS 4935A
 RT AMS 4954A
 RT AMS 4965
 RT AMS 4967A
 RT MIL-T-9046
 RT MIL-T-9047
 TI-6AL-4V ELI
 6AL-4V-BAL(TI) EXTRA LOW INTERSTITIAL
 UF HA-6510ELI
 UF RS-120A-L
 BT TITANIUM
 RT AMS 4907A
 RT AMS 4930
 TI-6AL-6V-2SN
 6AL-6V-2SN-BAL(TI)
 UF HA-5158
 UF MST-6AL-6V-2SN
 BT TITANIUM
 RT AMS 4918A
 RT AMS 4971
 TI-6AL-6V-2,5SN
 6AL-6V-2,5SN-BAL(TI)
 BT TITANIUM
 TI-7AL-4MO
 7AL-4MO-BAL(TI)
 BT TITANIUM
 RT AMS 4970A

TI-7AL-12ZR
 7AL-12ZR-BAL(TI)
 UF MST-7AL-12ZR
 BT TITANIUM
 TI-8AL-1MO-1V
 8AL-1MO-1V-BAL(TI)
 UF HA-8116
 UF MST-811
 UF RMI-811
 UF RS 135B
 UF RS-811X
 UF WC-8-1-1
 BT TITANIUM
 RT AMS 2241
 RT AMS 2242
 RT AMS 2249
 RT AMS 4915A
 RT AMS 4955
 RT AMS 4972
 RT AMS 4973
 TI-8AL-2CB-1TA
 8AL-2CB-1TA-BAL(TI)
 BT TITANIUM
 TI-8MN
 8MN-BAL(TI)
 UF C-110M
 UF RS-110A
 BT TITANIUM
 RT AMS 4908A
 RT MIL-T-9046
 TI-13V-11CR-3AL
 13V-11CR-3AL-BAL(TI)
 UF B-120VCA
 UF MST-13V-11CR-3AL
 UF RS-120B
 BT TITANIUM
 RT AMS 4917
 TI-16V-2.5AL
 16V-2.5AL-BAL(TI)
 BT TITANIUM
 TI-155A
 USE TI-SAL-1.5CR-.5FE-1MO
 TI-679
 11.0SN-2.25AL-5.0ZR-1.0MO-.30SI-.0.2FE-.013H2
 -BAL(TI)
 UF IMI 679
 BT TITANIUM
 TRICENT
 USE 300M
 TRW 1900
 .1'C-10.3CR-10.0CO-9.0W-1.5CB-1.0TI-6.3AL
 -.030B-.10ZR-BAL(NI)
 BT NICKEL
 TUNGSTEN (W)
 B' BASE MATERIAL
 TYPE H-11 MODIFIED STEEL
 USE H-11 MODIFIED
 TYPE 202
 .15C-9.0MN-1.0SI-18.0CR-5.0NI-.25N-.06P-.03S
 BT STEEL
 TYPE 420
 >.15C-1.0MN-1.0SI-13.0CR-.04P-.03S
 BT STEEL
 TYPE 422
 12CR-1MO-1W-0.8NI-0.25V-BAL(Fe)
 BT STEEL
 RT AMS 5655
 TYPE 431
 0.2C-16CR-2NI-BAL(Fe)
 BT STEEL
 RT AMS 5372
 TYPE 440(A),(B),(C)
 HIGH C-17CR-0.5MO-BAL(Fe)
 BT STEEL

TYPE 502
 >.10C-5.0CR-0.55MO-1.0SI
 BT STEEL
 RT AMS 6466
 RT AMS 6467
 TZC
 1.2TI-0.25ZR-0.15C-BAL(MO)
 UF MO-1.2TI-0.25ZR-0.15C
 BT MOLYBDENUM
 TZM
 0.5TI-0.08ZR-0.3C-BAL(MO)
 UF MO-.5TI-.08ZR-.3C
 BT MOLYBDENUM
 T 111
 8W-2.4HF-BAL(TA)
 UF TA-8W-2HF
 BT TANTALUM
 T 222
 10W-2.5HF-BAL(TA)
 UF TA-10W-2.5HF
 BT TANTALUM
 UDIMET 500
 .08C-18.0CR-18.5CO-4.0MO-2.9AL-.006B-.05ZR
 -BAL(NI)
 UF U 500
 BT NICKEL
 RT AMS 5384
 RT AMS 5751A
 RT AMS 5753
 UDIMET 520
 .05C-19.0CR-12.0CO-6.0MO-1.0W-3.0TI-2.0AL
 -.005B-BAL(NI)
 UF U 520
 BT NICKEL
 UDIMET 630
 .03C-18.0CR-3.0MO-3.0W-6.5CB-18.0FE-1.0TI
 -.0.5AL-BAL(NI)
 UF U 630
 BT NICKEL
 UDIMET 700
 .08C-15.0CR-18.5CO-5.2MO-3.5TI-4.3AL-.030B
 -BAL(NI)
 UF U 700
 BT NICKEL
 UNIMACH UCX 2
 USE AISI 4137 CO
 USS STRUX
 0.43C-0.9CR-0.75NI-0.5MO+V+B-BAL(Fe)
 UF 98BV40 MODIFIED
 BT STEEL
 USS-12MOV
 12CR-1MO-0.65NI-0.3V
 BT STEEL
 USS 17-5 MNV
 0.1C-17CR-15MN-5NI-2MO-0.75V-0.35N-BAL(Fe)
 BT STEEL
 U 500
 USE UDIMET 500
 U 520
 USE UDIMET 520
 U 630
 USE UDIMET 630
 U 700
 USE UDIMET 700
 VANADIUM (V)
 BT BASE MATERIAL
 VASCO MA
 0.5C+CR+MO+W+V-BAL(Fe)
 BT STEEL
 VITALLIUM
 27CR-5MO-3NI-BAL(CO)
 BT COBALT
 V-36
 25CR-20NI-4MO-3FE-2CB-2W-BAL(CO)
 BT COBALT
 V-57
 25.5NI-15CR-3TI-1.25MO-0.3V-0.25AL-BAL(Fe)
 BT STEEL

WASPALLOY

.08C-19.5CR-13.5CO-4.3MO-3.0TI-1.3AL-.006B
 -.06ZR-BAL (NI)
 BT NICKEL
 RT AMS 5544
 RT AMS 5586
 RT AMS 5704
 RT AMS 5706B
 RT AMS 5707B
 RT AMS 5708
 RT AMS 5709
 RT AMS 5828

WC-8-1-1
 USE TI-8AL-1MO-1V

WI-52

.45C-.25MN-.25SI-21.0CR-11.0MO-2.0CB-2.0FE
 -BAL (CO)
 BT COBALT

WW (FEDERAL SPECIFICATIONS FOR METAL PIPE AND TUBING)

WW-T-783
 BT GOVERNMENT SPECIFICATIONS
 RT 1100

WW-T-785
 BT GOVERNMENT SPECIFICATIONS
 RT 2024

WW-T-787
 BT GOVERNMENT SPECIFICATIONS
 RT 5052

WW-T-788
 BT GOVERNMENT SPECIFICATIONS
 RT 3003

WW-T-789
 BT GOVERNMENT SPECIFICATIONS
 RT 6061

WZM
 25W-0.1ZR-0.03C-BAL (MO)
 UF MO-25W-.1ZR-.03C
 BT MOLYBDENUM

W-545
 26NI-13.5CR-3TI-1.75MO-1.6MN-BAL (FE)
 BT STEEL
 RT AMS 5543
 RT AMS 5741D

X888
 USE 888

X-40
 .50C-.75MN-.75SI-25.5CR-10.5NI-7.5W-BAL (CO)
 UF STELLITE 31
 BT COBALT
 RT AMS 5382D

X-110
 USE 043

X-200
 0.43C-2.0CR-1.6SI-0.5MO-0.05V-BAL (FE)
 BT STEEL

ZE10A
 1ZN-0.2RE-BAL (MG)
 BT MAGNESIUM

ZIRCALOY 2
 1.55NI-8AL (ZR)
 BT ZIRCONIUM

ZIRCONIUM
 NT ZIRCALOY 2
 BT BASE MATERIAL

ZK51A
 4.5ZN-0.7ZR-BAL (MG)
 BT MAGNESIUM
 RT AMS 4443A
 RT QQ-M-56

ZK60

5.5ZN-0.5ZR-BAL (MG)
 UF ZK60A
 UF ZK60B
 BT MAGNESIUM
 RT AMS 4352C
 RT AMS 4362A
 RT QQ-M-31A
 RT QQ-M-40
 ZK60A
 USE ZK60
 ZK60B
 USE ZK60

ALLOY DESIGNATIONS BEGINNING WITH NUMBERS

9-4-20
 USE HP-9-4-20
 9-4-25
 USE HP-9-4-25
 9-4-45
 USE HP-9-4-45
 14S
 USE 2014
 14-4PH
 14CR-4.2NI-2.3MO-3.2CU-0.25 (CB + TA)
 BT STEEL
 RT AMS 5340

16-15-6
 16CR-15NI-7.5MN-6MO-0.35N-BAL (FE)
 BT STEEL

16-25-6
 25NI-16CR-6MO-BAL (FE)
 BT STEEL

17S
 USE 2017

17-4PH
 17CR-4NI-4CU-BAL (FE)
 BT STEEL
 RT AMS 5342
 RT AMS 5343
 RT AMS 5344
 RT AMS 5355A
 RT AMS 5398A
 RT AMS 5643H
 RT AMS 5825A
 RT AMS 5827

17-7PH
 17CR-7NI-1AL-BAL (FE)
 BT STEEL
 RT AMS 5528A
 RT AMS 5529A
 RT AMS 5568
 RT AMS 5644C
 RT AMS 5673B
 RT MIL-S-25043

17-22 A (S)
 0.3C-1.3CR-0.5MO-0.25V-BAL (FE)
 BT STEEL

RT AMS 6302A
 RT AMS 6385A
 RT AMS 6450B

17-22 A (V)
 0.28C-1.25CR-0.85V-0.65SI-0.5MO-BAL (FE)
 BT STEEL
 RT AMS 6303
 RT AMS 6436

19-90L
 19.25CR-9.0NI-1.25MO-1.25W-.4CB-.3TI-.3C-BAL (FE)
 BT STEEL
 RT AMS 5369A
 RT AMS 5526C
 RT AMS 5527A
 RT AMS 5579
 RT AMS 5720A
 RT AMS 5721B
 RT AMS 5722B

19-9DX
 19.25CR-9.0NI-1.50MO-1.25W-.6TI-.3C-BAL (FE)
 BT STEEL
 RT AMS 5538
 RT AMS 5539
 RT AMS 5723A
 RT AMS 5724
 RT AMS 5729
 24S
 USE 2024
 25S
 USE 2025
 40-E
 5.5ZN-0.6MG-0.5CR-0.2TI-BAL (AL)
 BT ALUMINUM
 52S
 USE 5052
 61S
 USE 6061
 75S
 USE 7075
 988V40 MODIFIED
 USE USS STRUX
 195
 4.5CU-BAL (AL)
 BT ALUMINUM
 RT AMS 4230C
 RT AMS 4231C
 RT QQ-A-601
 220
 10MG-BAL (AL)
 BT ALUMINUM
 RT AMS 4240C
 RT QQ-A-601
 300M
 0.43C-1.8NI-1.6SI-0.8CR-0.4MO-V-BAL (FE)
 UF TRICENT
 BT STEEL
 355
 5SI-1.2CU-0.5MG-BAL (AL)
 BT ALUMINUM
 RT AMS 4210F
 RT AMS 4212E
 RT AMS 4214D
 RT AMS 4280E
 RT AMS 4281C
 RT QQ-A-596
 RT QQ-A-601
 356
 7SI-0.3MG-BAL (AL)
 BT ALUMINUM
 RT AMS 4217D
 RT AMS 4260A
 RT AMS 4261
 RT AMS 4284D
 RT AMS 4285
 RT AMS 4286A
 RT QQ-A-596
 RT QQ-A-601
 418 SPECIAL
 USE GREEK ASCOLOY
 713C
 USE INCONEL ALLOY 713
 1100
 99.0AL
 BT ALUMINUM
 RT AMS 4001C
 RT AMS 4003C
 RT AMS 4062D
 RT AMS 4102B
 RT AMS 4180B
 RT AMS 7220C
 RT MIL-R-5674
 RT MIL-W-6712
 RT QQ-A-561
 RT WW-T-783

2014
 4.5CU-0.8SI-0.8MN-0.5MG-BAL (AL)
 UF 14S
 BT ALUMINUM
 RT AMS 4014
 RT AMS 4028B
 RT AMS 4029B
 RT AMS 4121C
 RT AMS 4134A
 RT AMS 4135J
 RT AMS 4153C
 RT QQ-A-261
 RT QQ-A-266
 RT QQ-A-367
 2017
 4.0CU-0.7MN-0.50MG-BAL (AL)
 UF 17S
 BT ALUMINUM
 RT AMS 4110A
 RT AMS 4118D
 RT QQ-A-351
 2020
 4.5CU-1.1LI-0.5MN-0.2CD-BAL (AL)
 BT ALUMINUM
 2021
 6.3CU-0.3MN-BAL (AL)
 BT ALUMINUM
 2024
 4.5CU-1.5MG-0.6MN
 UF 24S
 BT ALUMINUM
 RT AMS 4033A
 RT AMS 4035E
 RT AMS 4037F
 RT AMS 4086F
 RT AMS 4087C
 RT AMS 4088E
 RT AMS 4097
 RT AMS 4098
 RT AMS 4099
 RT AMS 4103
 RT AMS 4104
 RT AMS 4105
 RT AMS 4106
 RT AMS 4112
 RT AMS 4119C
 RT AMS 4120F
 RT AMS 4152G
 RT AMS 4164C
 RT AMS 4165C
 RT AMS 7223
 RT MIL-R-5674
 RT QQ-A-267
 RT QQ-A-268
 RT QQ-A-355
 RT WW-T-785
 2025
 4.5CU-0.85SI-0.80MN-BAL (AL)
 UF 25S
 BT ALUMINUM
 RT AMS 4130G
 RT QQ-A-367
 2219
 6.3CU-0.3MN-0.18ZR-0.1V-0.06TI-BAL (AL)
 UF RR-57
 BT ALUMINUM
 RT AMS 4031A
 RT AMS 4143
 RT AMS 4144
 RT MIL-A-8920
 2319
 6.3CU-0.3MN-0.18ZR-0.15TI-0.10V-BAL (AL)
 BT ALUMINUM
 RT AMS 4191A

2618

2.3CU=1.6MG=1.1FE=1.1NI=0.07TI-BAL (AL)

UF F18S

UF RR=58

BT ALUMINUM

RT AMS 4132A

RT QQ-A=367

3003

1.25MN-BAL (AL)

BT ALUMINUM

RT AMS 4006C

RT AMS 4008C

RT AMS 4010

RT AMS 4065C

RT AMS 4067C

RT QQ-A=359

RT WW-T=788

3004

.30SI=1.25MN=.25CU=.1MG=.25ZN=.7FE-BAL (AL)

BT ALUMINUM

3105

BT ALUMINUM

5050

0.40SI=0.7FE=0.20CU=0.20MN=0.75MG=0.10CR
=0.25ZN-BAL (AL)

BT ALUMINUM

5052

2.5MG=0.25CR-BAL (AL)

UF 52S

BT ALUMINUM

RT AMS 4015E

RT AMS 4016E

RT AMS 4017E

RT AMS 4069

RT AMS 4070F

RT AMS 4071F

RT AMS 4114C

RT QQ-A=315

RT QQ-A=318

RT WW-T=787

5056

5MG=0.12MN=0.12CR-BAL (AL)

BT ALUMINUM

RT AMS 4182A

RT QQ-A=430

5083

4.5MG=0.65MN=0.15CR-BAL (AL)

BT ALUMINUM

RT AMS 4056B

RT AMS 4057B

RT AMS 4058B

RT AMS 4059C

RT MIL-A=8701

RT MIL-A=17358

5086

.40SI=.45MN=.10CU=4.0MG=.15TI=.25ZN=.15CR

=.50FE-BAL (AL)

BT ALUMINUM

5154

3.5MG=0.25CR-BAL (AL)

BT ALUMINUM

RT AMS 4018A

RT AMS 4019

RT MIL-A=17357

5454

.40FE+SI=.75MN=.10CU=2.7MG=.25ZN=.13CR=.20TI
-BAL (AL)

BT ALUMINUM

5456

5.1MG=0.8MN=0.10CR-BAL (AL)

BT ALUMINUM

6061

1.0MG=0.6SI=0.25CU=0.25CR-BAL (AL)

UF 61 S

BT ALUMINUM

RT AMS 4025D

RT AMS 4026D

RT AMS 4027E

RT AMS 4043

RT AMS 4053

RT AMS 4079

RT AMS 4080G

RT AMS 4081A

RT AMS 4082F

RT AMS 4083D

RT AMS 4115A

RT AMS 4116B

RT AMS 4117B

RT AMS 4127C

RT AMS 4146A

RT AMS 4150D

RT AMS 4160A

RT AMS 4161A

RT MIL-T-7081

RT QQ-A=270

RT QQ-A=325

RT QQ-A=327

RT QQ-A=367

RT WW-T=789

6062

1.0MG=0.6SI=0.25CU=0.09CR-BAL (AL)

BT ALUMINUM

RT AMS 4091A

RT AMS 4092A

RT AMS 4093A

RT AMS 4155B

6063

0.65MG=0.4SI-BAL (AL)

BT ALUMINUM

RT AMS 4156D

6151

1SI=0.6MG=0.25CR-BAL (AL)

UF A51S

BT ALUMINUM

RT AMS 4125E

RT QQ-A=367

6951

.35SI=0.8FE=0.30CU=0.10MN=0.60MG=0.20ZN-BAL (AL)

BT ALUMINUM

7001

.35SI=0.40FE=2.1CU=0.20MN=3.0MG=0.29CR=7.4ZN
=0.20TI-BAL (AL)

BT ALUMINUM

7002

BT ALUMINUM

7005

BT ALUMINUM

7006

BT ALUMINUM

7007

6.5ZN=1.8MG-BAL (AL)

BT ALUMINUM

7039

.30SI=C.40FE=0.10CU=0.25MN=2.8MG=0.20CR=4.0ZN
=0.10TI-BAL (AL)

BT ALUMINUM

7075

5.6ZN-2.5MG-1.6CU-0.3CR-BAL (AL)

UF 75S

BT ALUMINUM

RT AMS 4038A

RT AMS 4044C

RT AMS 4045C

RT AMS 4122D

RT AMS 4123C

RT AMS 4139F

RT AMS 4141

RT AMS 4154F

RT AMS 4168A

RT AMS 4169B

RT AMS 4170

RT QQ-A-277

RT QQ-A-282

RT QQ-A-263

RT QQ-A-367

7079

4.3ZN-3.3MG-0.6CU-0.2NN-0.17CR-BAL (AL)

BT ALUMINUM

RT AMS 4024A

RT AMS 4136

RT AMS 4138

RT AMS 4171A

RT MIL-A-8825

RT MIL-A-8877

RT QQ-A-367

7080

6ZN-2.2MG-1CU-BAL (AL)

BT ALUMINUM

7106

BT ALUMINUM

7139

BT ALUMINUM

7178

6.8ZN-2.75MG-2CU-0.3CR-BAL (AL)

UF A78S

BT ALUMINUM

RT AMS 4158A

RT MIL-A-9186

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211	Recent Developments in Welding Thick Titanium Plate, November 24, 1965 (AD 477403)
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1. ORIGINATING ACTIVITY (Corporate author) Defense Metals Information Center Battelle Memorial Institute 505 King Avenue, Columbus, Ohio 43201		2a. REPORT SECURITY CLASSIFICATION Unclassified
		2b. GROUP
3. REPORT TITLE Designations of Alloys for the Aerospace Industry		
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) DMIC Memorandum		
5. AUTHOR(S) (Last name, first name, initial) Penniman, W. D.		
6. REPORT DATE	7a. TOTAL NO. OF PAGES 32	7b. NO. OF REFS 0
8a. CONTRACT OR GRANT NO. AF 33(615)-3408	9a. ORIGINATOR'S REPORT NUMBER(S) DMIC Memorandum 223	
b. PROJECT NO.		
c.	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
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11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY United States Air Force Research and Technology Division Wright Patterson Air Force Base, Ohio	
13. ABSTRACT This document presents a computer-generated listing of principal alloys of interest in defense work. Included in the listing are alloy designations, specifications, and nominal compositions. Because the report is machine generated, it is intended to be updated frequently in order to keep up with new alloys and specifications.		

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14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Aluminum						
Beryllium						
Chromium						
Cobalt						
Columbium						
Iron (Superalloys)						
Magnesium						
Molybdenum						
Nickel						
Steel						
Tantalum						
Titanium						
Alloy Designations						
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Alloys						
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